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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/673,641

09/26/2003

William J. Gibson

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EXAMINER

BURCH, MELODY M

ART UNIT

PAPER NUMBER

3683

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,641

Applicant(s)

GIBSON, WILLIAM J.

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: In the last line of pg. 1 "axel" should be changed to --axle--; in line 3 of pg. 5 the phrase "spiral groove 58 the bushing" should be reworded for grammatical purposes.

Appropriate correction is required.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the brake actuator, set of wheel brakes, respective brake shoes, the brake drum, and the wheel first claimed in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Examiner also notes that the drawings are not easily visible.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement

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Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1-27 are objected to because of the following informalities: in line 3 of claim 1 in the phrase "the second end, of the shank," the punctuation should be corrected, in the last two lines of claim 1 and in the third line from the bottom of claim 15 the phrase "comprising:" should be changed to --the support assembly comprising--, in claims 2-14 and 16-27 the word --wherein-- should be included between the preamble and the body of claim, in line 2 of claim 11 (also see claim 24) the phrase "by a first and second seal members" should be reworded for grammatical purposes, in the last line of claim 11 the phrase "s cam" should be changed to --S cam-- for consistency, in line 2 of claim 15 the phrase "end the shank" should be reworded. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-14, 20-23, 25-27, 33, 35-37, 39-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Re: claim 1. The phrase "the second end" in line 3 lacks proper antecedent basis in the claim and "the brake shoe" in line 4 from the bottom is indefinite since it is unclear to the Examiner as to which brake shoe Applicant is referring to "a respective brake shoe" earlier claimed suggests the presence of more than one brake shoe. Also it is unclear to the Examiner whether the brake shoe is the same or different from the set of wheel brakes.

Re: claims 7, 33, 34, 37, and 39. The phrase "the bushing holder in line 1 of claim 7 and line 2 of the remaining claims lacks proper antecedent basis.

Re: claim 12. The phrase "the s cam shank outside margin" in line 1 lacks proper antecedent basis.

Re: claim 13. The phrase "the s cam shank outside margin" in line 1 lacks proper antecedent basis.

Re: claim 20. The phrase "the inside margin" in lines 1-2 from the bottom lacks proper antecedent basis.

Re: claim 25. The phrase "the s cam shank outside margin" in line 1 lacks proper antecedent basis.

Re: claims 35 and 36. The phrase "the bushing holder inside margin" lacks proper antecedent basis.

Re: claim 36. The phrase "the circumferential groove" lacks proper antecedent basis.

Re: claim 37. The phrases "the at least one spiral groove", "the inside margin of the bushing holder", and "the circumferential groove" lack proper antecedent basis.

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Re: claims 40 and 41. The phrase "the S cam shank outside margin" lacks proper antecedent basis.

Re: claim 42. The phrases "the S cam shank outside" and "the inside margin" lack proper antecedent basis.

The remaining claims are indefinite due to their dependency from the above listed rejected claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 2886141 to House.

Re: claims 1-3 and 28-30. House shows in figure 2 a support assembly 16 for supporting a s cam 72,70,66,60, the s cam being an intermediary device between a brake actuator 50 and a set of wheel brakes 32 shown in figure 1 and is generally an elongate shank 53 having an s head 72,70,66 at a first end of the shank and a set of splines 52 disclosed in col. 2 lines 60-61 at the second end of the shank, the s head having at least one arm shown in figure 4 for engaging a respective brake shoe 32, whereby rotation of the s cam in a first direction causes the at least one arm of the s head to act on the brake shoe to frictionally engage the brake shoe with a brake drum

30 shown in figure 1, the brake drum being affixed to a wheel connected to element 30 comprising a single bushing 16 rotationally supporting the s cam.

House is silent as to the material of the shank.

Due to the lack of criticality associated with the limitation of the shank being metal, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shank of the s cam to have been made of metal in order to provide a shank with high structural integrity.

Re: claims 4 and 31. Due to the lack of criticality associated with the limitation of the bushing being formed of a plastic material, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the bushing to have been made of a plastic material in order to provide a lightweight but durable bushing structure.

8. Claims 1, 2, 4-6, 11, 13, 15, 16, 18, 19, 24, 28, 29, 31, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 3497037 to Deibel.

Re: claims 1, 2, 16, 19, 28, and 29. Deibel shows in figure 4 a support assembly

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140,145 for supporting a s cam 118,119,128, the s cam being an intermediary device between a brake actuator 122 and a set of wheel brakes 112 shown in figure 1 and is generally an elongate shank 128 having an s head 118 at a first end of the shank and a set of splines 155 at the second end of the shank, the s head having at least one arm shown in figures 1 and 2 for engaging a respective brake shoe 112, whereby rotation of the s cam in a first direction causes the at least one arm of the s head to act on the brake shoe to frictionally engage the brake shoe with a brake drum 102 shown in figure 1, the brake drum being affixed to a wheel connected to element 102 comprising a single bushing 145 rotationally supporting the s cam.

Deibel is silent as to the material of the shank.

Due to the lack of criticality associated with the limitation of the shank being metal, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shank of the s cam to have been made of metal in order to provide a shank with high structural integrity.

Re: claims 4, 18, and 31. Due to the lack of criticality associated with the limitation of the bushing being formed of a plastic material, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been

obvious to one of ordinary skill in the art at the time the invention was made to have modified the bushing to have been made of a plastic material in order to provide a lightweight but durable bushing structure.

Re: claims 5, 6, and 15. Deibel shows in figure 4 the bushing being substantially enclosed within a bushing holder 140.

Re: claim 11, 24, and 38. Deibel shows in figure 4 the bushing being substantially sealed within a bushing holder by first 146 and second 148 seal members disposed at first and second ends of the bushing respectively, each of the seal members forming a sealing interface with the bushing holder and the s cam shank. Claim language does not disclose that each of the seals is disposed directly adjacent an end of the bushing.

Re: claim 13. Deibel shows in figure 4 the s cam shank outside margin being spaced apart from an inside margin of the bushing. Examiner notes that there is inherently a narrow clearance between the bushing and the shank to allow rotation of the shank.

9. Claims 1-7, 15-20, 28-34, 39, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6240806 to Morris et al. in view of US Patent 2382554 to Eksbergian et al.

Re: claims 1-3, 5, 6, 15-17, 19, 28-30, 32 and 33. Morris et al. show in figure 4 a support assembly 54,59,60 for supporting a s cam 53,52 the s cam being an intermediary device between a brake actuator 18 and a set of wheel brakes disclosed in col. 1 lines 15-16 cooperating with element 53 and is generally an elongate shank 52

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having an s head 53 at a first end of the shank and a set of splines 64 at the second end of the shank, the s head having at least one arm shown in figure 2 for engaging a respective brake shoe, whereby rotation of the s cam in a first direction causes the at least one arm of the s head to act on the brake shoe to frictionally engage the brake shoe with a brake drum as disclosed in col. 1 lines 15-16, the brake drum being affixed to a wheel implicitly described by the disclosure in col. 1 lines 15-16 and col. 4 lines 42-43 comprising a bushing assembly rotationally supporting the s cam. (bushing holder is element 54.)

Morris et al. fail to disclose that the bushing assembly comprises a single bushing and are silent as to the material of the shank.

Eksergian et al. teach on pg. 2 line 73 – pg. 3 line 2 the use of a single elongate bearing to replace two spaced apart bearings.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the two spaced apart bushings of Morris et al. to have included a single elongate bushing, in view of the teachings of Eksergian, in order to facilitate assembly by having less parts.

Due to the lack of criticality associated with the limitation of the shank being metal, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been obvious to one of ordinary skill in the art at the time

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the invention was made to have modified the shank of the s cam to have been made of metal in order to provide a shank with high structural integrity.

Re: claims 4, 18, and 31. Due to the lack of criticality associated with the limitation of the bushing being formed of a plastic material, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the bushing to have been made of a plastic material in order to provide a lightweight but durable bushing structure.

Re: claims 7, 20, and 34. Morris et al., as modified, teach in figure 4 of Morris et al. the bushing holder having at least one grease fitting 72 disposed in a bore defined through a bushing holder body.

Re: claim 39. Morris et al., as modified, teach in figure 4 of Morris et al. including forming a sealing interface with the bushing holder and the s cam shank in the area of element 63.

Re: claim 41. Morris et al. teach in figure 4 of Morris et al. the s cam shank outside margin being spaced apart from an inside margin of the bushing. Examiner notes that there is inherently a narrow clearance between the bushing and the shank to allow rotation of the shank.

10. Claims 12, 14, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over House in view of 4346535 to Asano et al.

Re: claims 12 and 40. House shows in figure 2 the s cam shank outside margin having a certain outside diameter.

House is silent as to method of production of the shank outside margin.

Asano et al. teach in col. 1 lines 14-15 the use of a shank of a cam being machined. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shank of House to have been machined, as taught by Asano et al., in order to provide a means of creating the various diameter differences in the shank.

Examiner notes that the limitation of the shank outside margin being machined represents a method of making the shank. In section 2113 of the MPEP it is stated that the patentability of a product is not based on its method of production but on the product itself.

Re: claims 14 and 42. House shows in figure 2 the limitation wherein the s cam shank outside margin is spaced apart from an inside margin of the bushing as implied by the presence of element 58 which allows the flow of lubricant into a small clearance between elements 16 and 60.

House does not specifically disclose a range of sizes of the space. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the space of House to have been an amount between .001 and .010 inches since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

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11. Claims 12, 14, 25, 26, 27, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deibel in view of 4346535 to Asano et al.

Re: claims 12, 25, and 40. Deibel shows in figure 4 the s cam shank outside margin having a certain outside diameter.

Deibel is silent as to method of production of the shank outside margin.

Asano et al. teach in col. 1 lines 14-15 the use of a shank of a cam being machined. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shank of Deibel to have been machined, as taught by Asano et al., in order to provide a means of creating the various diameter differences in the shank.

Examiner notes that the limitation of the shank outside margin being machined represents a method of making the shank. In section 2113 of the MPEP it is stated that the patentability of a product is not based on its method of production but on the product itself.

Re: claims 14, 26, and 42. Deibel shows in figure 4 the limitation wherein the s cam shank outside margin is spaced apart from an inside margin of the bushing.

Deibel does not specifically disclose a range of sizes of the space.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the space of Deibel to have been an amount between .001 and .010 inches since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

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12. Claims 12, 14, 25, 26, 27, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al. in view of Eksergian et al. and further in view of 4346535 to Asano et al.

Re: claims 12, 25, and 40. Morris et al., as modified, teach in figure 4 of Morris et al. the s cam shank outside margin having a certain outside diameter.

Morris et al., as modified, is silent as to method of production of the shank outside margin.

Asano et al. teach in col. 1 lines 14-15 the use of a shank of a cam being machined. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shank of Morris et al., as modified, to have been machined, as taught by Asano et al., in order to provide a means of creating the various diameter differences in the shank.

Examiner notes that the limitation of the shank outside margin being machined represents a method of making the shank. In section 2113 of the MPEP it is stated that the patentability of a product is not based on its method of production but on the product itself.

Re: claims 14, 26, and 42. Morris et al., as modified teach in figure 4 of Morris et al. the limitation wherein the s cam shank outside margin is spaced apart from an inside margin of the bushing.

Morris et al., as modified, do not specifically disclose a range of sizes of the space.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the space of Morris et al., as modified, to have been an amount between .001 and .010 inches since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

13. Claims 8-10, 21-23, and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6240806 to Morris et al. in view of US Patent 2382554 to Eksbergian et al. and further in view of US Patent 6450073 to Boyer et al.

Re: claims 8, 21, and 35. Morris et al., as modified, describe the invention substantially as set forth above, but does not include the limitation of the grease fitting intersecting a circumferential groove defined in the bushing holder inside margin.

Boyer et al. teach in figures 3 and 4 the use of a bushing holder 30 having a circumferential groove 38 defined in the bushing holder inside margin.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inside margin of the bushing holder of Morris et al., as modified, to have included a circumferential groove, as taught by Boyer et al., in order to provide a means of directing lubricant flow into the inner portions of the bushing holder.

Re: claims 9, 10, 22, 23, 36, and 37. Morris et al., as modified, teach in figures 3 and 4 of Boyer et al. the limitation of a circumferential groove 38 intersecting at least one spiral groove 40 defined in the bushing holder inside margin.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inside margin of the bushing holder of Morris et al., as modified, to have included at least one spiral groove intersecting a circumferential groove, as taught by Boyer et al., in order to provide a means of directing lubricant flow into the inner portions of the bushing holder.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents: 3076531 to Hanley et al., 4838389 to Mamery, and 5887687 to Williams teach similar s-cam brake assemblies, and US Patent 4576488 to Steiner et al. teach the use of a bearing bushing having a bushing holder with a grease fitting.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 703-308-0830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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December 8, 2004

Melody M. Burch
12/8/04